

Disclaimer:

This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

Notes:

1. Untranslatable words are replaced with asterisks (***).
2. Texts in the figures are not translated and shown as it is.

Translated: 04/01/56 JST 04/27/2011

Dictionary: Last updated 04/08/2011 / Priority: 1. Chemistry

FULL CONTENTS

[Claim(s)]

[Claim 1]A manufacturing method of a rooibos tea extract performing water extraction within limits which exceed pH 7 for rooibos tea and do not exceed pH 12.

[Detailed Description of the Invention]

[0001]

[Industrial Application]In this invention, about the manufacturing method of the rooibos tea extract used as health food and a palatability drink, an alkali and/or alkali salt are added in more detail, and water extraction treatment is carried out by specific pH within the limits.

Therefore, it is related with the method of manufacturing the extract in which a color tone and flavor have been improved.

[0002]

[Description of the Prior Art]Rooibos tea (scientific name: *Aspalathus linearis*) is grown with the vegetation of the pulse family only in the specific area in South Africa. It is also called Rooibos tea, Redbush tea, Rooiboschtea, and taste tea, and what fermented the leaf has the high-quality aroma and taste similar to tea, and is regularly used as a beverage widely centering on Europe.

[0003]Although rooibos tea contains many polyphenol, such as flavonoid and tannin, in component and also includes vitamin C, mineral salt, etc., since caffeine is not included, both children and elderly people can say that it is a good drink which can be drunk widely and which is mild and has few stimuli.

[0004]Although rooibos tea was used for the purpose of a long life, cosmetics, and **** for many years also as a folk medicine aiming at the improvement of an allergy disease, and the skin and an internal disease, etc. and it was suggested that a pharmacological action occurs, It is reported that the polyphenol contained in rooibos tea by the latest research has a removal action of harmful active oxygen in the living body (Antioxidants in Therapy and Preventive Medicine, p171-174, 1990), The effect to aging prevention, an antioxidant action, a carcinogenic prevention operation, etc. is beginning to be expected.

[0005]Some proposals which use these effects under such a background are made. For example, the thing for which rooibos tea or its decoction is added for foodstuffs, and flavor, a state, etc. are improved (JP,62-239958,A), Using a rooibos tea extract as anti-oxidants, such as foodstuffs, cosmetics, and

medicine (JP,63-117090,A), adding a rooibos tea extraction extract to household detergent, and performing chlorine removal and dry-rough-skin prevention (JP,4-89896,A), etc. are proposed. [0006]However, each of these proposals adds rooibos tea or a rooibos tea extract in foodstuffs, cosmetics, drugs, or a detergent as it is, it extracts without impairing the color tone which rooibos tea has in the above-mentioned gazette for the purpose of acquiring effects, such as an improvement of a state, anti-oxidization, and chlorine removal, and flavor, and is not indicated at all about manufacturing the rooibos tea extract excellent in palatability for drinks.

[0007]There are some reports also about the extraction method of rooibos tea. For example, examine the temperature and the amount of solvents in extraction of rooibos tea, and, [in 23-90 **] The report of research (Int. J.Food. Sci. Technol., 25, No.3, 339-343, 1990) that polyphenol is easy to be extracted, so that temperature is high, The report of research which investigated the relation between the extraction time and the amount of polyphenol extracted in extraction of the rooibos tea at 90 ** (Lebensm. -Wiss. u. -Technol., 23, 181-183, 1990), the extract which carried out short-time extraction of the rooibos tea with boiling water -- spray drying -- or, [freeze-dry and] The report of research (Int. J. Food. Sci. Technol., 25, No.3, 344-349, 1990) etc. which performed measurement of a polyphenol content and organic-functions evaluation occur.

[0008]However, these reports of research hold the outstanding color tone and aroma in which rooibos tea originally has the amount of extraction of polyphenol for the purpose of making [many] it, and have not made reference about the method of manufacturing the extract for obtaining the drink excellent in palatability.

[0009]
[Problem to be solved by the invention]According to the report of research like the above, extraction of polyphenol by the water from rooibos tea has so good extraction efficiency that temperature is high, and it is known that it is proportional to extraction time. On the other hand, a pigment and a taste component are also extracted so well that temperature is high. However, according to this invention persons' research, when extraction time became long, it turned out that it changes from reddish brown with a bright color tone of an extract to dark red, and flavor also changes to that where the original aroma of rooibos tea is lost and which is featureless. In extraction by hot water of rooibos tea, thus, extraction and the pigment of polyphenol, It is very difficult to perform both of extraction of flavor that it is simultaneous and efficiently, and in order to extract many polyphenol, when the usual hot and prolonged hot water extract is performed, there is a problem of becoming an extract where the balance of flavor collapses and which is featureless.

[0010]
[Means for solving problem]Then, this invention persons inquired wholeheartedly, in order to solve the problem like the above. As a result, if an alkali or alkali salt, such as sodium hydrogencarbonate, are added, pH is raised and it extracts on conditions milder than before when extracting rooibos tea with water, A good color tone and flavor are held, and it finds out that the rooibos tea extract which was extremely excellent in palatability is obtained, and came to complete this invention.

[0011]In this way, according to this invention, the manufacturing method of the rooibos tea extract carrying out water extraction treatment within limits which exceed pH 7 for rooibos tea and do not exceed pH 12 is provided. Hereafter, this invention is described still in detail.

[0012]The things which carried out fermentation treatment of the green leaf of rooibos tea (scientific name: *Aspalathus linearis*), branches, these dry matters, or these, these arbitrary mixtures, etc. are

included, on these Descriptions, these are named generically in the raw material used in this invention, and rooibos tea is told to it.

[0013]It can carry out by [suitable in the aqueous medium which could perform extraction of the rooibos tea like the above by hot water extract treatment of itself known, for example, heated rooibos tea] carrying out time churning. In within the limits which this invention exceeds pH 7 for this hot water extract treatment, and does not exceed pH 12, the feature is that it performs using the aqueous solvent of abbreviation 7.5 - 8.5 within the limits preferably. Regulation of this pH condition can be performed by adding an alkali and/or alkali salt to the aqueous medium for extraction. Although the aqueous medium for extraction usually uses water, it may also contain alcohols, such as 20% or less of ethyl alcohol, and glycerol.

[0014]The kind in particular of the alkali or alkali salt used for this pH regulation is not what is restricted, Alkali carbonate metal salt, such as hydroxylation alkali; sodium carbonate, such as sodium hydroxide, potassium hydroxide, and a calcium hydroxide, potassium carbonate, and sodium hydrogencarbonate; organic acid alkali salt, such as ascorbic acid alkali metal salt and citric acid alkali metal salt, can be illustrated. Sodium hydrogencarbonate can be preferably mentioned as that from which the savoriest extract is obtained in having inquired.

[0015]The amount of the aqueous medium used used for extraction is [as opposed to / generally / raw material leaf 1 weight section] about 2 - abbreviation, although it can choose arbitrarily according to the lot or state of rooibos tea of a raw material. Within the limits of about 5 - about 50 weight sections is preferably suitable 200 weight section.

[0016]moreover -- although extraction temperature is based also on extraction time and the amount of solvents -- usually -- about 40 - abbreviation [] -- 100 ** -- desirable -- about 70 - abbreviation [] -- if it extracts at the temperature within the limits of 100 **, an extraction extract can be obtained in a short time.

[0017]Even if extraction time is based on extraction temperature, it changes also with differences between an extraction means, for example, batch extraction, and column extraction, but about 0.5 - the range of about 2 hours can be mentioned preferably for about 15 minutes - about 4 hours, for example. Next, working example is given and this invention is explained still more concretely.

[0018]

[Working example]

(Working example 1) the aqueous solution of pH 8.0 which added 2 g to the water 1000g, and dissolved sodium hydrogencarbonate in it is put into the 1500-ml 3 head flask provided with the thermometer, the agitator, and the reflux condenser -- the leaf of the rooibos tea which fermented 100 g is taught. Temperature was gone up to 80 **, agitating, extraction of 2 hours was performed and 750 g (this invention article 1) of savory extracts of Brix. 3.0 and pH 6.6 were obtained.

[0019](Comparative example 1) Except [all] not adding sodium hydrogencarbonate to the water 1000g in working example 1, it extracts by the same method and is an extract of Brix. 2.3 and pH 4.8. 750 g (comparison article 1) was obtained. The amount of polyphenol of the extract obtained by working example 1 and the comparative example 1 and the measurement result of color difference, and the result of flavor evaluation are shown in the following table 1.

[0020]

[Table 1]

	ポリフェノール量 %	色 差			風味評価
		L	a	b	
比較品 1	0.41	68.4	12.4	30.4	特徴なし
本発明品 1	0.50	62.9	16.1	27.6	シャープ、良好

The fixed quantity of polyphenol was performed with the Folin-Denis colorimetric method. Measurement of color difference measured the diluted solution in transmission 10 times by Spectro Colorimeter 5Z sigma90 (Nippon Denshoku).

[0021](Working example 2) In an extraction column with an 800-ml jacket ($\phi 6\text{cm} \times 30\text{cm}$) It is filled up with the leaf of the rooibos tea which performed 100 g of fermentation, Water The aqueous solution of pH 7.7 which added 0.25g of sodium hydrogencarbonate to 500 g, and dissolved was heated at about 90 **, it poured into this column, and immersion extraction was performed for 30 minutes. After extraction, from the lower part, liquid was sampled and it cooled below to the room temperature immediately. The liquid obtained by performing two more extraction was mixed using the solvent of the same presentation. Finally they are Brix.2.7 and pH 5.07 savory extract. 770 g (this invention article 2) was obtained.

[0022](Working example 3) In working example 2, it is a substitute of the sodium hydrogencarbonate 0.25g. The aqueous solution of pH 7.9 which added 0.5 g and dissolved was used, and also [all] it extracted by the same method, and extract 760g (this invention article 3) of Brix. 2.8 and pH 5.65 was obtained.

[0023](Working example 4) In working example 2, it is a substitute of the sodium hydrogencarbonate 0.25g. The aqueous solution of pH 8.3 which added 2.0 g and dissolved was used, and also [all] it extracted by the same method, and extract 750g (this invention article 4) of Brix. 3.8 and pH 7.68 was obtained.

[0024](Working example 5) Use pH 11.0 aqueous solution which 0.125 g Added sodium hydroxide instead of the sodium hydrogencarbonate 0.25g, and dissolved in working example 2, and also [all] it extracts by the same method, Brix. 3.0, pH 6.50 extract 760 g (this invention article 5) was obtained.

[0025](Working example 6) Use pH 11.5 aqueous solution which added 0.25 g and dissolved sodium hydroxide instead of the sodium hydrogencarbonate 0.25g in working example 2, and also [all] it extracts by the same method, Extract of Brix. 3.8 and pH 8.0 755 g (this invention article 6) was obtained.

[0026](Comparative example 2) It is water, without using sodium hydrogencarbonate in working example 2. It extracted only at 500 g, and also [all] extracted by the same method, and extract 753g (comparison article 2) of Brix. 2.5 and pH 4.78 was obtained.

[0027]The result of having performed the fixed quantity of polyphenol, measurement of color difference, and flavor evaluation like the above about the extract of the comparison article 2 produced by performing it above and this invention article 2-6 is shown in the following table 2. pH of this invention

article 2-6 was set to pH 4.78 as well as the comparison article 2 at the time of flavor evaluation.

[0028]

[Table 2]

	ポリフェノール量 %	色 差			風味評価
		L	a	b	
比較品 2	0.50	57.8	17.6	37.6	特徴なし
本発明品 2	0.61	52.0	22.1	34.7	シャープ、良好
本発明品 3	0.68	43.7	27.0	29.8	シャープ、良好
本発明品 4	0.71	35.9	32.4	24.8	シャープ、特に良好
本発明品 5	0.60	50.0	23.5	30.5	シャープ、良好
本発明品 6	0.70	35.0	33.5	23.0	シャープ、良好

[0029]As shown in Table 2, when sodium hydrogencarbonate or sodium hydroxide was added compared with the flavor of the comparison article 2 being featureless, flavor was all improving. It is especially sodium hydrogencarbonate. The characteristic aroma of rooibos tea is the best and this invention article 4 added 0.1% was held. Also in the amount of polyphenol, compared with the comparison article 2, this invention article 2-6 all went up. While each a value rose and redness also increased the color tone, the amount of extraction of the pigment was also increasing.

[0030]

[Effect of the Invention][by extracting the leaf of the rooibos tea (scientific name: Aspalathuslinearis) belonging to the pulse family with the water which added alkalis, such as sodium hydrogencarbonate, and/or alkali salt according to this invention] While extracting polyphenol efficiently, it is very useful that manufacture of the rooibos tea extract which was extremely excellent in palatability is attained without impairing the good color tone and flavor which rooibos tea originally has, and the use to a wide range of fields, such as health food and a drink, opens etc.

[Translation done.]